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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty Docket No. A01484

In re application of:
Anne Denise Koller, et al.

Serial No.: 10/762,047 : Group Art Unit: 1773

Confirmation No. 4478 :

Filed: 01/21/2004 : Examiner: Leszek B. Kiliman

For: **ORGANIC-INORGANIC COMPOSITE PARTICLE AND PROCESS FOR PREPARATION THEREOF**

MAIL STOP: APPEAL BRIEF - PATENTS
Commissioner for Patents
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Amended Appeal Brief Under 37 C.F.R. 41.37(d)
Copy of Notice of Appeal From Primary Examiner to the
Board of Patent Appeals and Interferences

04/30/2007
Date

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Signature

GROUP ART UNIT: 1773
APPEAL NO. _____

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

APPEAL BRIEF

In re the Application of KOLLER et al.

Filed: January 21, 2004

Serial No. 10/762,047

For: ORGANIC-INORGANIC COMPOSITE PARTICLE AND PROCESS FOR PREPARATION THEREOF

Karl E. Stauss
Attorney for Appellants

Leszek B. Kiliman
Examiner

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : KOLLER et al.

Application No. : 10/762,047 **Group No.** : 1773

Filed : January 21, 2004 **Examiner** : Leszek B. Kiliman

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AMENDED APPEAL BRIEF UNDER 37 C.F.R. 41.37(d)

This is an appeal from the rejection dated February 24, 2006 finally rejecting claims 1-2, 4-7 and 9-10, and amended responsive to the Notification of Non-Compliant Appeal Brief, mailed March 28, 2007. The rejected claims are set out in the Appendix. Appellants timely filed a Notice of Appeal pursuant to 37 C.F.R. § 1.191 on May 24, 2006, and an Appeal Brief.

(1) Real Party In Interest

The owner of the present application and the invention contained therein is ROHM AND HAAS COMPANY.

(2) Related Appeals and Interferences

No appeals or interferences are known to Appellants, the Appellants' legal representative, or the assignee which will directly affect or be directly affected by or have

a bearing on the Board's decision in the pending appeal. Accordingly, no "Related Proceedings" are attached hereto.

(3) Status Of Claims

The status of the claims is as follows:

Claims pending: 1-2, 4-7 and 9-10

Allowed claims: none

Claims objected to: none

Claims rejected: 1-2, 4-7 and 9-10

Claims on appeal: 1-2, 4-7 and 9-10

Claims withdrawn from consideration by the Examiner: none

(4) Status of Amendments after Final Rejection

No amendments were filed after final rejection of the present application.

(5) Summary Of Claimed Subject Matter

The present invention (as recited in instant claim 1) provides an aqueous dispersion comprising organic-inorganic composite particles [p. 3, lines 19-20; p. 3, lines 24-29], each organic-inorganic composite particle comprising:

a) a primary composite particle [p. 3, line 20; p. 5, lines 13-14] comprising:

i) an inorganic particle [p.3 , line 21; p. 5, lines 14-16] , and

ii) a plurality of polymer particles covalently bonded to said inorganic particle [p.3, lines 21-22; p. 5, lines 14-16; p. 14, lines 25-26]; and

b) a polymer layer encapsulating said primary composite particle [p. 3, lines 22-23].

The present invention also provides (as recited in instant claim 6) a process for preparing an aqueous dispersion, having organic-inorganic composite particles, comprising the steps of:

a) providing primary composite particles dispersed in an aqueous medium, wherein each of said primary composite particles comprise: an inorganic particle and a plurality of

polymer particles covalently bonded to said inorganic particle[p. 3, lines 25-29; p. 14, lines 25-26]; and

b) polymerizing at least one monomer in the presence of said primary composite particles to form a polymer layer encapsulating said primary composite particles and to provide said organic-inorganic composite particles [p.3, lines 29-31].

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 1-2, 4-7 and 9-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bardman et al. (U.S. Patent No. 6,710,161).

(7) Argument

I. Rejection under 35 U.S.C. § 103(a) of Claims 1-2 and 6-7

Appellants respectfully submit that the present invention is not obvious under 35 U.S.C. § 103(a) because A) the §103(a) rejection is improper; and B) Bardman et al. do not teach a process for making an aqueous dispersion and the aqueous dispersion comprising organic-inorganic composite particles, each having all of the limitations: a) a primary composite particle comprising i) an inorganic particle, and ii) a plurality of polymer particles covalently bonded to said inorganic particle; and b) a polymer layer encapsulating said primary composite particle.

A. The §103(a) rejection is improper

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. MPEP 706.02(j). "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

In the Office Action of April 19, 2005, the Examiner rejected claims 1-3 and 6-8 under 35. U.S.C. §102(e) as being anticipated by Bardman et al. and 4-5 and 9-10 under 35 U.S.C. §103(a) as being unpatentable over Bardman et al. See, p. 2, 2nd paragraph; p.

3, 4th paragraph. In the Office Action of October 7, 2005, the Examiner withdrew the §102(e) rejection of claims 1-3 and 6-8 and rejected claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Bardman et al. See, p. 2, 4th paragraph. No explanation as to why the §102(e) rejection was withdrawn was included in the Office Action. In the Office Action of October 7, 2005 and the subsequent Office Action of February 24, 2006, under the rejection under the 35 U.S.C. §103(a), the Examiner merely stated that Bardman et al. disclose "all elements of the claimed invention." See, Office Action of 10/7/05, p. 3, 1st paragraph; Office Action of 2/24/06, p. 3, 1st paragraph. If this were the case, then the §102(e) rejection could not have been overcome. Thus, the rejection of claims 1-2 under §103(a) is improper and the claims are allowable.

B. Bardman et al. do not teach all of the limitations of claims 1-2 and 6-7

Even if claims 1-2 and 6-7 were rejected under §102(e), Bardman et al. do not disclose all of the limitations of the invention. It is well settled that all features of the instant claims must be taught or suggested somewhere in the art. *In re Royka*, 490 F.2d 981 (CCPA 1974). In addition, all features of the instant claims must be found in the art itself, and cannot be harvested from the instant invention disclosure through impermissible hindsight reconstruction of the instant invention. See MPEP 2145.X.A. Accordingly, it is well settled that all features of the instant claims must have been taught in the art as of the time of the filing of the instant application and not thereafter. See MPEP 2141.01.III.

First, Bardman et al. do not disclose composite particles having polymer particles covalently bonded (both adsorbed and reacted) to an inorganic particle, as claimed. Bardman et al. teach composite particles with polymer particles that are only "adsorbed to the surface of each pigment particle." See, col. 13, lines 16-18; col. 14, lines 48-50. In the Office Action mailed on February 24, 2006, the Examiner does not even address this limitation and cites the same information in Bardman et al. as he did in the Office Action mailed on October 7, 2005, despite Applicants' amendments of December 7, 2005 (and resent on January 4, 2006) specifying that the polymer particles are "covalently bonded."

Second, Bardman et al. do not disclose encapsulating the composite particle, which comprises both the inorganic particle and the polymer particles covalently bonded

thereto. In Bardman et al., a second polymer may be used as a film-forming binder. See, col. 15, lines 1-15. With a film-forming binder, the second polymer could, in essence, encapsulate the particles in layer of film (coating), but, according to the disclosure of Bardman et al., the second polymer would not encapsulate the particles while they are in an aqueous dispersion. The composite particle of Bardman et al., itself, does not contain a primary composite particle having polymer particles covalently bonded to an inorganic particle, encapsulated by a polymer layer. See, Application, p. 5, second full paragraph.

II. Rejection under 35 U.S.C. § 103(a) of Claims 4-5 and 9-10

Appellants respectfully submit that the present invention is not obviousness under 35 U.S.C. § 103(a) because A) there claims depend upon claims 1 and 6,which are allowable, as discussed above, and B) Bardman et al. do not teach an aqueous dispersion and a process for preparing an aqueous dispersion having all of the limitations of claims 4-5 and 9-10.

A. Claims 4-5 and 9-10 depend upon claims 1 and 6

Claims 4-5 and 9-10 should be allowable as dependent upon allowable claims.

B. Bardman et al. do not teach the limitations of claims 4-5 and 9-10

In determining the differences between the prior art and the claims, the question under 35 U.S.C. §103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983). "The test for an implicit showing [of obviousness] is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

In addition, a *prima facie* case of obviousness requires that one skilled in the art would have had a reasonable expectation of success in light of the prior art. *In re Dow Chemical*, 837 F.2d 469, 473 (Fed. Cir. 1988). Presence of a property not possessed by

the prior art is evidence of nonobviousness. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

In the Office Action mailed on February 24, 2006, the Examiner stated that Bardman et al. do "not specifically teach the limitations of claims 4, 5, 9, 10" and do not disclose "that composite particle[s] may comprise encapsulated particles in aqueous dispersion[s]." Office Action of 2/24/06, p. 3, 1st full paragraph. The Examiner further stated that "it would have been obvious to one having ordinary skill in the art at the time of the invention was made to use the teaching of Bardman [et al.] ... and suspend such particles in aqueous dispersion, and vary the weight ratio of polymer particles and combine polymer weight, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art." Office Action of 2/24/06, p. 3, 2nd full paragraph.

The invention provides a dispersion and process for making the dispersion of organic-inorganic particles that, as a coating, have improved hiding, whiteness and gloss. See, Application, p. 1, lines 6-7. "These organic-inorganic composite particles allow the preparation of dried coatings containing lower levels of pigment, such as titanium dioxide; or are applied at lower coating weights than coatings not containing encapsulated titanium dioxide." P. 3, lines 13-16. The polymer composition of Bardman et al. provides corrosion resistant coatings with improved solvent resistance (see, col. 1, lines 19-22, 35-36, 40-41), but does not possess the properties of improved whiteness or gloss.

The particles of Bardman et al. provide coatings with increased levels of hiding, but only when "compared to coating[s] containing equivalent levels of pigment particles but do not contain composite particles." Col. 13, lines 21-24. Because Bardman et al. does not possess any of the improved properties of the invention, there would be no motivation to combine Bardman et al., which is directed to corrosion resistance and improved solvent resistance, with any knowledge possessed by one of ordinary skill in the art at the time the invention was made with respect to suspending the particles and varying weights. Accordingly, the combination of the prior art reference and knowledge of one of ordinary skill in the art cannot meet every single feature of the instant claims and thus does not constitute a *prima facie* case of obviousness. MPEP 2143.03.

III. Conclusion

Based on the foregoing, Appellants respectfully submit that the pending claims are currently in condition for allowance. As such, Appellants respectfully request the Board to pass the pending claims to allowance.

Enclosed herewith, Appellants have filed a Certificate of Mailing to establish the timely filing of the instant Appeal Brief.

The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,

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April 30, 2007

(8) CLAIMS APPENDIX

1. An aqueous dispersion comprising organic-inorganic composite particles, each organic-inorganic composite particle comprising:

a) a primary composite particle comprising:

i) an inorganic particle, and

ii) a plurality of polymer particles covalently bonded to said inorganic particle; and

b) a polymer layer encapsulating said primary composite particle.

2. The aqueous dispersion according to claim 1 wherein said polymer particles have absorbing groups selected from phosphorus acid groups, phosphorus acid full-ester groups, polyacid sidechain groups, and mixtures thereof.

4. The aqueous dispersion according to claim 1 wherein the weight ratio of said polymer particles that are attached to said inorganic particle to said polymer layer is in the range of from 10:1 to 1:10.

5. The aqueous dispersion according to claim 1 having a combined polymer weight of said polymer particles and said polymer layer in the range of from 5 to 90 weight %, based on the weight of said organic-inorganic composite particle.

6. A process for preparing an aqueous dispersion, having organic-inorganic composite particles, comprising the steps of:

a) providing primary composite particles dispersed in an aqueous medium, wherein each of said primary composite particles comprise: an inorganic particle and a plurality of polymer particles covalently bonded to said inorganic particle; and

b) polymerizing at least one monomer in the presence of said primary composite particles to form a polymer layer encapsulating said primary composite particles and to provide said organic-inorganic composite particles.

7. The process according to claim 6 wherein said polymer particles have at least one functional group selected from the group consisting of phosphorus acid groups, phosphorus acid full-ester groups, polyacid sidechain groups, and mixtures thereof.

9. The process according to claim 6 wherein the weight ratio of said polymer particles that are attached to said inorganic particle to said polymer layer is in the range of from 10:1 to 1:10.

10. The process according to claim 6 wherein said organic-inorganic composite particle has a combined polymer weight of said polymer particles and said polymer layer in the range of from 5 to 90 weight %, based on the weight of said organic-inorganic composite particle.

(9) EVIDENCE APPENDIX

None.

(10) RELATED PROCEEDINGS APPENDIX

None.